

Index No. Y-213

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CARBIDE AND CARBON CHEMICALS CORPORATION

Y-12 PLANT

W-7405-eng-26

ADDITIONAL PERSONNEL REQUIREMENTS FOR THE OPERATION
OF TWO BETA BUILDINGS

Prepared by the Plant Superintendent's Office

Oak Ridge, Tennessee
August 6, 1948

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INTRODUCTION

This is a study made to determine the increase in personnel required to operate two Beta Buildings as outlined in the basic assumptions.

It was considered that the Research and Development program would remain at essentially the present level.

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DETAIL OF BASIC ASSUMPTIONS USED AS A GUIDE FOR THIS REPORT

The assumptions listed below correspond to the type of operations mentioned in the last two paragraphs, page 24, of the report "Evaluation of the Electromagnetic Process for the Separation of U-235".

WASTE REDUCTION 4J CASE "C" UNITS
2 BETA BUILDINGS
PLUS PRESENT OPERATION

Feed Rate	3.42 Kg/day
Feed XC	24%
XUE	95%
Production	3.25 Kg/day
Current/J	110 ma
Current/Tank	44 Amps.
XPE	25%
Enhancement	40
Length of Run	100 hrs.
Power per track	6,630 KWH
Number of J's/Operator	48
Material in Salvage	2.8 %
Loss/Cycle	0.35 %

Number of Terminations/Day = $144/4.17 = 35$
 Charge Weight = $TCL_4 = 2,300 \text{ gms.}$

Charge Material required/day = $2,300 \times 35 = 80.5 \text{ TCL}_4$

COMPARISON CALCULATIONS WITH CASE "C" - 4J

	<u>Waste Reduction</u>
TCL ₄ Required/day	80.5 Kg
Plus Present Research	92.5 Kg
Recycle	37.7 Kg
Plus Present Research	43.4 Kg
Salvage	1.06 Kg
Plus Present Research	1.22 Kg
RX/day	.25 Kg
Plus Present Research	3.63 Kg

Isotope 1/2
 Start by
 9/1/48
 Beta

6.

Good

SUMMARY OF ADDITIONAL PERSONNEL REQUIREMENTS
FOR THE OPERATION OF TWO BETA BUILDINGS

DIVISION AND DEPARTMENTS		PRESENT PERSONNEL June 27, 1948		ADDITIONAL PERSONNEL	TOTAL PERSONNEL
Refining ✓	425	189	239	475	664
Engineering ✓	70	70	70	20	90
Chemical ✓	587	355	455	489	844
Maintenance ✓	978 - ?	721	850	417	1138
Industrial Relations ✓	353	303	325	81	384
Manufacturing Office ✓	215	183	205	39	222
Wage Standards ✓	8	6	8	3	9
Superintendent's ✓	36	31	36	5	36
Central Reports and Information	13	21	13	2	23
Chemical Development ✓	0	86	—	0	86
Process Development	0	60	—	0	60
Isotope Development	0	125	—	0	125
	2685	2150	2196	1531	3681

SUMMARIZATION OF ADDITIONAL PERSONNEL REQUIREMENTS
BY MAJOR BREAKDOWN FOR THE OPERATION OF TWO BETA BUILDINGS

	<u>HOURLY</u>	<u>WEEKLY</u>	<u>MONTHLY</u>	<u>TOTAL</u>
Scientific, Professional and Engineering		34	38	72
Key Personnel			54	54
Skilled Trades	397			397
Supervisory	18	11	23	52
Clerical	12	102	2	116
General Plant Personnel	777	63		840
	<hr/>	<hr/>	<hr/>	<hr/>
Total:	1204	210	117	1531